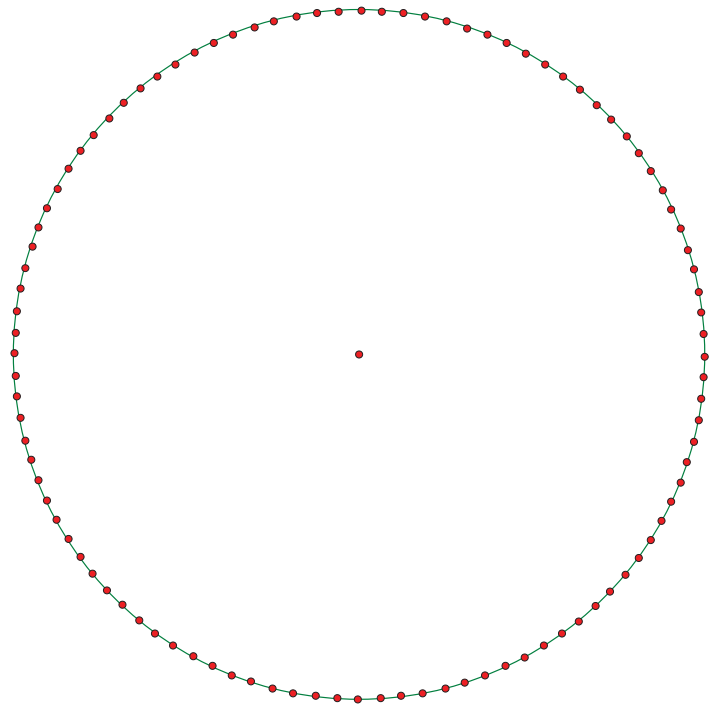
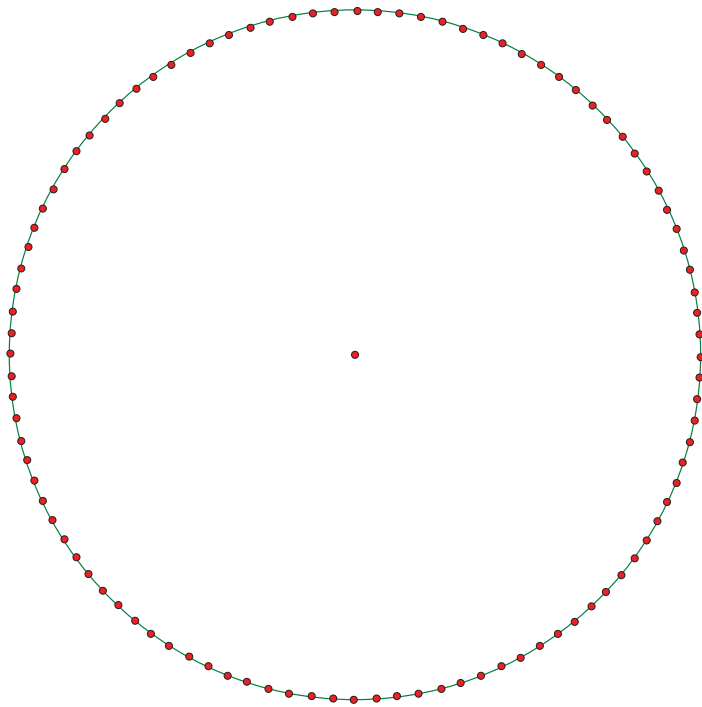
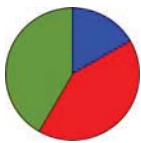

3.7.1: Template for Circle Graph



**Math Learning Goals**

- Create a circle graph by calculating percentages to determine the central angles.
- Use a protractor to measure the central angles.

Materials

- BLM 3.8.1
- fraction circles
- protractors

Assessment Opportunities**Minds On...****Small Groups → Discussion**

Students share their circle graphs and explanations from previous day's Home Activity. Circulate to identify students who may have selected a strategy that can be used when uncommon fractions are involved, (to calculate central angles).

Whole Class → Demonstration

Using an overhead, demonstrate the steps and strategies to create a circle graph. Use fraction circle pieces to reinforce the connection between fractions, percents, and degrees. Once they have calculated the degrees they use a protractor to accurately measure and construct central angles of the circle graph.

Action!**Pairs → Constructing Circle Graphs**

Students display data represented in a relative frequency table (BLM 3.8.1) as a circle graph (BLM 3.7.1). Students relate frequencies to fractions, to percents, and to angles.

Curriculum Expectations/Application/Checkbric: Assess students' ability to apply their understanding of the relationships between fractions, percents and the central angle in a circle graph.

Differentiated Instruction

- Provide circle graphs showing percents by 10% increments around the diameter.
- Provide circle graphs showing degrees in increments of 10%.

Consolidate Debrief**Whole Class → Discussion**

Reinforce the strategies and steps used to create a circle graph. Include probing questions such as:

- If the calculated percentages add up to 110, what does this indicate?
- If the total calculated degrees have a sum of 340 degrees, what should you do?

Reinforce the concepts that the sum for the percents must be 100 and the sum of the angles must be 360 degrees.

Home Activity or Further Classroom Consolidation

Choose some data and create a circle graph. List the steps you took to make the circle graph and prove with more than one strategy that your circle graph is accurate.

This leads to methods for angle calculation:
Central angle with degrees = (fraction of the whole) \times 360
or central angles in degrees = (percent of whole) \times 360.

*Application
Concept Practice
Reflection*

Suggest newspapers, magazines, textbooks, etc., as sources of data. Or, provide various sets of data from which students make a selection.

3.8.1: Creating a Circle Graph

Survey results of favourite sports in Grade 7.

Subject	Frequency	Fraction	Percent	Degree Calculation
Hockey	25			
Soccer	50			
Lacrosse	10			
Basketball	10			
Other				
Totals	100			

Survey results for the favourite types of music of students in Grade 7.

Type of Music	Frequency	Fraction	Percent	Degree Calculation
Country	8			
Pop	20			
Rap	8			
Other	4			
Totals	40			

Survey results of number of siblings.

Number of Siblings	Frequency	Fraction	Percent	Degree Calculation
0	50			
1			50%	
2	150			
3+				
Totals	500			